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## TECHNICAL NOTES

LAKE STATES FOREST EXPERIMENT STATION  
U.S. DEPARTMENT OF AGRICULTURE · · FOREST SERVICE

No. 622

Volume and Use of Wood Residues From Primary Processing in Minnesota

Wood residues from sawmills and other log-using plants are frequently proposed as a source of raw material for making paper, paperboard, felt, charcoal, and other products. Two questions posed by potential buyers are, "How much of these residues is produced annually?" and "What becomes of them?" Answers to these questions have been acquired during the course of the current Minnesota Forest Survey. The profitability of using any of these materials would, of course, have to be determined for any proposed salvage operation.

Station estimates based on survey findings<sup>1/</sup> show that approximately 165,000 cords of coarse and fine residues were developed at Minnesota primary wood-using plants in 1960 (see table 1). Sawmills accounted for about 90 percent of residue; veneer, cooperage, and lath mills accounted for the remaining 10 percent. Coarse, chippable residue amounted to nearly 90,000 cords in 1960. Not all of this material was discarded, however. More than half of it was consumed as industrial and domestic fuel and about 5 percent was taken for charcoal and other uses (see table 2). At present, none of the residue is used for pulping. It is estimated that 32,000 cords of chippable residue went unused in 1960.

Northern counties accounted for about 70 percent of the mill residue developed in the State. St. Louis, Itasca, and Beltrami Counties had the largest amounts (see table 3).

Table 1.--Volume of residues developed at primary wood-using plants, Minnesota, 1960.

(In thousand cords)<sup>1/</sup>

Kind of mill and species group	Coarse residue 2/			Fine residue 3/		
	State total	Northern counties	Southern counties	State total	Northern counties	Southern counties
<b>Sawmills</b>						
Softwoods	34	32	2	29	28	1
Hardwoods	45	23	22	41	21	20
Total	79	55	24	70	49	21
<b>Veneer and cooperage mills</b>						
Softwoods	-	-	-	-	-	-
Hardwoods	2	*	2	3	1	2
Total	2	*	2	3	1	2
<b>Match, lath, and shingle mills</b>						
Softwoods	1	1	-	1	1	-
Hardwoods	5	5	*	4	4	*
Total	6	6	*	5	5	*
<b>All mills</b>						
Softwoods	35	33	2	30	29	1
Hardwoods	52	28	24	48	26	22
Total	87	61	26	78	55	23

(Table footnotes appear on bottom of next page)

<sup>1/</sup> These estimates are based on information collected in 1961 from two sources: State forestry agencies and county land commissions contacted sawmills; the Station contacted other primary wood-using plants.

Table 2.--Disposition of this plant residue by area and species group.

Disposition	(In thousand cords) <sup>1/</sup>						
	Coarse residue <sup>2/</sup>			Fine residue <sup>3/</sup>			
	State	Northern	Southern	State	Northern	Southern	Counties
Softwoods							
For fiber	-	-	-	-	-	-	-
For fuelwood	16	14	2	4	4	4	*
For other uses <sup>4/</sup>	2	2	-	4	4	4	-
Not used	17	17	-	22	21	21	1
Total	35	33	2	30	29	29	1
Hardwoods							
For fiber	-	-	-	-	-	-	-
For fuelwood	35	15	20	7	6	6	1
For other uses <sup>4/</sup>	2	*	2	19	3	3	16
Not used	15	13	2	22	17	17	5
Total	52	28	24	48	26	26	22
All species							
For fiber	-	-	-	-	-	-	-
For fuelwood	51	29	22	11	10	10	1
For other uses <sup>4/</sup>	4	2	2	23	7	7	16
Not used	32	30	2	44	38	38	6
Total	87	61	26	78	55	55	23

Table 3.--Volume of plant residue produced, used, and not used in northern counties, 1960.

County and survey district	(In thousand cords) <sup>1/</sup>						
	Coarse residue <sup>2/</sup>			Fine residue <sup>3/</sup>			
	Produced	Used	Wasted	Produced	Used	Wasted	Produced
Carlton	5	4	1	5	4	4	1
Cook	3	*	3	2	*	*	2
Lake	3	*	3	3	-	-	3
Pine	1	1	*	*	*	*	*
St. Louis	11	2	9	10	1	1	9
Northeast District	23	7	16	20	5	5	15
Aitkin	4	3	1	3	-	-	3
Becker	2	2	*	2	-	-	2
Beltrami	6	5	1	5	3	3	2
Cass	4	2	2	4	2	2	2
Clearwater	3	2	1	3	2	2	1
Crow Wing	3	2	1	2	-	-	2
Hubbard	3	2	1	3	1	1	2
Itasca	8	3	5	8	3	3	5
Wadena	1	1	-	1	-	-	1
Central Pine District	34	22	12	31	11	11	20
Koochiching	3	1	2	3	1	1	2
Lake of the Woods	1	1	*	1	*	*	1
Rainey River District	4	2	2	4	1	1	3
Northern county total	61	31	30	55	17	17	38

1/ 79 cubic feet (bark free) wood per cord.

2/ Material suitable for chipping, such as slabs, edgings, veneer cores, etc.

3/ Material not suitable for chipping, such as sawdust, shavings, etc.

4/ Charcoal, small dimension, specialty items, livestock bedding, mulch, meat curing, etc.

\* Less than 500 cords.